LONGITUDINAL TRACKING OF HEALTH RISKS ASSOCIATED WITH THE SOLDIERS' LIFECYCLE ASSIGNMENT

LTC JUDITH RUIZ
Army War College Fellow Briefing to NDIA

7 April 2004

Objective

- This research project discusses a surveillance program, the Longitudinal Health Risk Assessment Program (LHRAP) and also, provides an overview of the Army Medical Department (AMEDD) and Department of Defense (DOD) interim electronic outpatient medical records.

Introduction

- *We are an Army at War. The challenge of the global war on terrorism demands the highest level of leadership and soldier proficiency. We cannot be risk-adverse; however, our soldiers are our most valuable combat assets. Therefore, reducing preventable losses throughout our formations is fundamental to protecting our combat readiness.*

—General Schoomaker

Background (cont)

- **Lessons Learned From the Gulf War**
  - Baseline and longitudinal health data is needed to determine the nature of health changes in service members.
  - Maintenance of retrievable electronic records of baseline health status, exposures, and health events that occur during a service member's career.
  - An integrated information system with a comprehensive computer-based medical record from accession to retirement that is transferable is critical to gain efficiency.

Background (cont)

- Maximize medical and environmental surveillance
  - A capability to collect information on:
    - All illnesses and injuries
    - Medical care
    - Immunizations
    - Exposures to potential health hazards
  - Throughout the lifecycle of service member in garrison as well as during deployment and after return to civilian life.

Background (cont)

- **President's Call in 1997**
  - For Veteran's Administration (VA) and DOD to start developing a "comprehensive, life-long medical record for each service member".
  - A directive requiring that VA and DOD to develop a "computer based patient record system.

Discussion (cont)

- **Evolution of the Military Health System in the last decade**
  - Developed and implemented more effective policy and programs that mandate health surveillance activities during all major deployments
  - Military preventive medicine although concerned with operational medicine, has recognized that minimizing chronic and preventive illnesses is just as important

Discussion (cont)

- **Force Health Protection**
  - Today's strategy encompasses the integration of the following programs:
    - Preventive
    - Clinical
    - Operational
- **Comprehensive Military Medical Surveillance**
  - Population-based
  - Broad range of indicators
    - Population factor, potentially hazardous exposures, use of protective measures and equipment, personal risk factors, health outcomes and clinical screening

Discussion (cont)

- **Current AMEDD Application Systems**
  - **Medical Protection System (MEDPROS)**
    - World-wide operational system to manage the medical readiness and deployability of units.
    - Provides commanders and functional staff reports to assess the medical readiness of a unit or an individual soldier.
    - MEDPROS tracks all the DOD individual medical readiness requirements.
    - MEDPROS elements feed individual Army Knowledge On line pages.

Discussion (cont)

- **HEALTHeFORCES**
  - Is a disease management and health promotion program at Walter Reed Army Medical Center
  - It supports five chronic health conditions and two preventive health services
  - Surveys are completed via handheld device or web-based browser and responses are automatically incorporated into a computer generated form
  - Providers generate a treatment plan and referrals using the computer generated and then document the data

Discussion (cont)

- **The Electronic Patient Care**
  - Is a Deployment Health and Readiness Tracking Program at Madigan Army Medical Center, Ft Lewis.
  - Uses Medbase-Integrated Clinical Data Base (ICDB) to acquire and display information from legacy Composite Health Care System (CHCS) and Clinical Information System (CIS), and handheld fielded recorders
  - Enables electronic patient record keeping across Ft Lewis

Discussion (cont)

- **MEDBASE**
  - Is used at Brooke army Medical Center to address the need to monitor soldier healthcare outside of the medical centers from the field to the installation
  - Medbase software captures medical readiness data, to include pre- and post-deployment information and in-theater medical tracking, and for providing medical readiness situational readiness to commanders

Discussion (cont)

- **Army Health Assessment Programs**
  - **Army Physical Fitness Research Institute Program**
    - Assesses baseline health and fitness of senior military officers
    - Prepares senior officers to assume individual responsibility for optimal health and fitness
      - AFRI provides health screenings, assessments, case management, and fitness programs
    - Realignment within US Army Medical Command created an opportunity to expand AFRI to a larger number of senior leaders

Discussion (cont)

- **Longitudinal Health Risk Assessment Program**
  - Will be fielded at Fort Meade with a future plan to replicate the program at two other Army installations
  - Evidence-based screening and risk reduction program, it is designed to decrease morbidity and mortality associated with chronic health risks
  - The program's core is its assessment of health status and risk factors for cardiovascular disease and cancer for service members 35 and older
    - ***Management Model***
      - » Follow-up interventions programs are tailored to the individual
      - » Individuals are tracked and their progress is measured

Discussion (cont)

- ***Core Model Components***
  - » Major risk factors for coronary heart disease (age, gender, cholesterol, smoking status, blood pressure, and blood pressure medication)
  - » Other Cardiovascular variables (C-Reactive Protein, blood glucose, body mass index)
  - » Cancer Variables (results from diagnostic procedures or screening test based on age and gender for cervical, breast and prostate cancer)
  - » Self-reported risk factors (alcohol, tobacco use, family history, diet, exercise and occupational history)

Discussion (cont)

- ***Collection of Health Data***
  - » Data collected from the health risk appraisal supports the completion of the newly designed electronic DOD Forms, Report of Medical Examination and Report of Medical History
  - » Template components are designed based on medical record documentation guidelines, and approved algorithms based on national clinical practice guidelines

Discussion (cont)

- **DOD Programs**
  - **Recruitment Assessment Program**
    - A proposed DOD program for the routine collection of demographic, medical, psychosocial, occupational, and health risk factors from all U.S. military personnel at the time of accession.
      - Administered during the first two weeks of training
      - Uses an optically scannable paper questionnaire that will be entered into a centralized computer database on a continual basis
      - The working RAP questionnaire is being pilot tested, the scanning software and computer hardware requirements are also being evaluated

Discussion (cont)

- **Defense Medical Surveillance System**
  - Is the central repository of medical surveillance data for the U.S. Armed Forces.
  - Integrates data from sources worldwide in a continuously expanding relational database that documents current and historical data related to medical events.
    - Hospitalization, outpatient visit, reportable diseases, HIV results, and health risk appraisals.
    - Personal characteristics, such as rank, military occupation, demographic factors and military experiences
  - The system contains more than 250 million records on 7.4 million service members who served on active duty since 1990

Discussion (cont)

- **Defense Occupational and Environmental Health Readiness System**
  - Is a component of the Theater Medical Information Program
  - Will be DoD's multi-service occupational exposure database information system for all three military departments.
  - DOEHRS will integrate industrial hygiene and environmental surveillance information for Military Health System occupational health staff and command surgeons
  - The system will capture data for transfer to the computerized patient record standardizing the process throughout the services.
  - DOEHRS will provide individual longitudinal exposure records for all DOD personnel, both military and civilian

Discussion (cont)

- **Occupational and Environmental Health (OEH) Data Portal**
  - A web-based document archival portal for Occupational and Environmental Health Surveillance Data
  - Will become the central repository where deployed preventive medicine units will document and archive exposure data
  - Is an interim solution that focuses primarily on deployed service members
  - It contains pre-deployment site surveys, base camp assessments and preventive unit reports

Recommendations

- A strategic plan that integrates population health concepts into the MHS
- A comprehensive health care management model that integrates health data periodically as a part of a longitudinal health record
- A computer based patient record is critical to gain the greatest efficiency
- Information technology must be linked to a business process and well-developed management plan
- Identifying evidenced-based risk factors for disease and injury to prevent progression is critical
- Longitudinal studies to know the effects of the LHRAP

Conclusion

- Health promotion/risk reduction programs can lead to improved outcomes and optimal service member health status
- A single health promotion and the longitudinal electronic medical record are of vital importance to all branches of the military
- Until full implementation of an electronic medical record the focus of the Army Medical Department should be on integrating capabilities that have been found to be valuable in their interim efforts.

Questions

LTC JUDITH RUIZ
Army War College Fellow
Judith.Ruiz@hqda.army.mil

(703) 604-2310